ADVANTICA

HAZARD AWARENESS TRAINING

Can you afford to miss this?

SPADEADAM

Test Facility

Course aim

To give an appreciation of the consequences of loss of containment through a series of lectures and experimental demonstrations of fire, explosion and dispersion hazards. The experiments and lectures will be combined with video footage and examples of model calculations to give an overview of the consequences and mitigation techniques following a loss of containment.

People who should attend this course:

- Operational personnel on onshore petrochemical sites and offshore oil and gas platforms
- Emergency response teams and services
- Safety managers
- Hazard assessment engineers

Course Content

The content of the course can be tailored to suit the needs of individual companies.

It can also be incorporated into individual company training courses which can be held at the Spadeadam conference facilities. For more information, or to discuss your needs please contact us at the address on the back.

Delegates will be provided with notes detailing the subjects covered during the course.

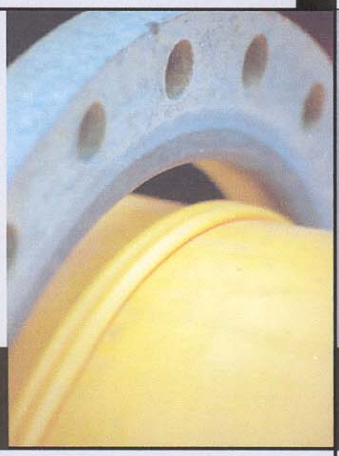
Advantica has a well established reputation in safety research, primarily relating to the study of major hazards (fire and explosions) associated with oil and gas operations. Over the past 20 years mathematical models of the consequences of accidental hydrocarbon releases have been developed and validated against large scale experimental data generated at Spadeadam.

Many of these experimental programmes have been jointly funded by oil and gas industry operators in major JIPs providing extensive data on gas dispersion, fire and explosion hazards.

Spadeadam Test Facility

The Spadeadam Test Site is a unique facility carrying out research and technical service work for the oil and gas, process and energy industries, construction industries as well as government agencies.

Spadeadam is a world leading test centre where full scale experiments of a potentially hazardous nature can be undertaken such as: - Hydrocarbon fires and explosions, and performance testing of equipment or components under operational or extreme conditions.



Day 1

Introduction and Purpose of the Course

Dispersion and Accumulation

- Potential causes and consequences of the loss of containment • Nature of release, low or high momentum; liquid, two-phase or gas • Gas dispersion and accumulation, liquid spreading and containment • Effects of ventilation, wind, confinement • Jet dispersion - gas and two-phase • Effect of obstacles and confinement • Model calculations for dispersion.
- Demonstration of jet dispersion

Lunch

Liquid Spread

- Liquid Spread • Model Calculations for liquid spread • Dense Gas Dispersion.

Fire Hazards

- Jet fires produced by high pressure releases of gas and/or liquid • Fuel type • Mitigation of jet fires • Main factors influencing consequences • Effect of thermal radiation and flame contact on structural members, vessels and pipes, potential for BLEVE's • Structural response
- Demonstration of jet fires

Close of Day 1

Day 2

Fire Hazards cont'd.

- Link from spillage of liquids to pool fires • Difference between bunded and non - bunded fires • Tank fires • Main factors affecting consequences • Mitigation of pool fires • Fuel type • Smoke • Model calculations
- Demonstration of diesel pool fire
- Demonstration of methanol pool fire

Explosions

- Important factors in the generation of overpressure • Importance of safety systems • Effect of congestion • Effect of confinement

Lunch

Explosions cont'd.

- Control and mitigation of explosions • Modelling of explosions • Structural response to explosions • Effect of explosions on panels, transfer of load to other structures • Generation of missiles
- Demonstration of confined explosion

Miscellaneous Hazards

A number of special cases exist such as rapid phase transitions of LNG, BLEVE's from pressurised liquid storage, fireballs and flash fires and finally propaging fractures in transmission pipelines.

Summary and Closing Comments

The cost of the two day course is £975 per person. The price does not include accommodation or transport to and from the test site.

Please complete the form and return to the address overleaf.

Name: .....

Job Title: .....

Address: .....

.....

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Email: .....

Day Time Telephone: .....

Date of Course: .....

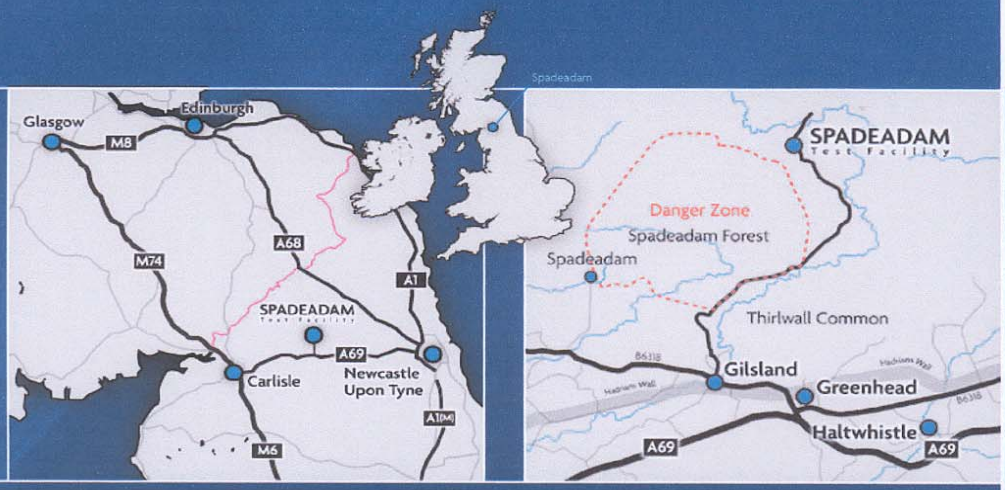
Accommodation can be provided at a local hotel at a preferential rate for dinner, bed and breakfast.
(Attendees to settle own bill directly with hotel)

Dates required: .....
(Not included in cost of course)

Method of Payment for Course:

- ☐ **Cheque** (Made payable to Advantica)
- ☐ **Company Order**

Registration is not possible without payment.



Logistics
Location: The course will be held over a two day period at the **Advantica Spadeadam Test Facility** in Cumbria

ADVANTICA

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For more information about the work conducted at Spadeadam visit our website at

www.**advantica**.biz/spadeadam

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